



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,688	10/21/2003	Theodore I. Kamins	200209306-1	6130
22879	7590	11/14/2006		
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			EXAMINER KUNEMUND, ROBERT M	
			ART UNIT 1722	PAPER NUMBER

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/690,688	Applicant(s) KAMINS ET AL.	
	Examiner Robert M. Kunemund	Art Unit 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-24 and 28-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-24 and 28-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 1, 5 to 24 and 28 to 40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the originally filed specification for the claims as are now amended. There is no teaching in the specification for the controllably forming in 3d as is now claimed and no support for growth in the 3d.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 5 to 7, 10 to 18, 20 to 24 and 28 to 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (6,831,017) in view of Gudiksen et al (Nature article).

The Li et al reference teaches a method and product of nanowires, note entire reference. On a substrate, a pattern of a catalyst is created and placed. The catalyst can be a gold dot, note col. 5 lines 15-25. Then the source materials for the nanowires are flowed over the substrate and caused to decompose to grow the nanowire, note col. 5 lines 26-45. The source materials are gases and decomposed by standard means and processes such as MOCVD. The grown nanowires can be silicon, II-VI or III-V. After the nanowire growth, an insulation material different from the nanowire material is deposited around the nanowires, note col. 5 lines 45-55. The Li et al reference differs from the instant claims in the nanowire having two materials. However, the Gudiksen et al reference teaches growing nanowires with two separate materials, note page 617. It would have been obvious to one of ordinary skill in the art to modify the Li et al reference by the teachings of the Gudiksen et al reference to have two materials in the nanowire in order to create diverse applications for the nanowire structure.

Claims 8, 9, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al in view of Gudiksen et al (Nature article).

The Li et al and Gudiksen et al references are relied on for the same reasons as stated, supra, and differ from the instant claims mold for the catalyst. However, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to determine through routine experimentation the optimum, operable means to pattern and apply the catalyst in the Li et al reference in order to create and maintain the desired pattern, which is the pattern for the nanowires.

Response to Applicants' Arguments

Applicant's arguments filed August 25, 2006 have been fully considered but they are not persuasive.

Applicants' argument concerning the 112 first paragraph rejection is noted. However, none of the cited paragraphs teaches the added limitation of controlling the 3d array growth as is claimed. There is no teaching in the specification which even alludes to the control as is now set forth.

The 1.132 declaration submitted by Dr. Kamins on August 25, 2006 has been fully considered by the examiner. It is noted, that the declarant is an inventor of the instant application making the declaration an opinionary one. The statement concerning the combination of references and the teachings of the Li et al reference is duly noted. However, the Li et al reference is clearly broader in teachings than what is set forth. The Li et al reference does not require an electric field and discloses other methods of array nanowire growth. Electric fields are taught to align or orientate only. More

Importantly, the Li et al reference does teach sizes of the nanowires. The sizes can be up to 200nm in height and width. This is in line with the sizes of the Gudiksen et

Art Unit: 1722

al article. In view of the other teachings of the Li et al article, which are not mentioned in the declaration, the examiner of record will maintain the rejection.

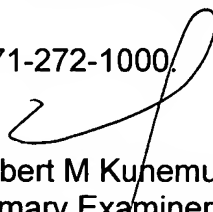
Applicants' argument concerning the combination is noted. The argument is based on the conclusion of the declaration. However, since the declaration is limited to one teaching of the Li et al reference, the conclusion of the declaration is not pertinent to the remaining teachings of the Li et al reference. Therefore, the rejection will be maintained as the Li et al reference does teach nanowires with similar sizes as that of the Gudiksen reference.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Kunemund whose telephone number is 571-272-1464. The examiner can normally be reached on 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1722

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Robert M Kuhemund
Primary Examiner
Art Unit 1722

RMK